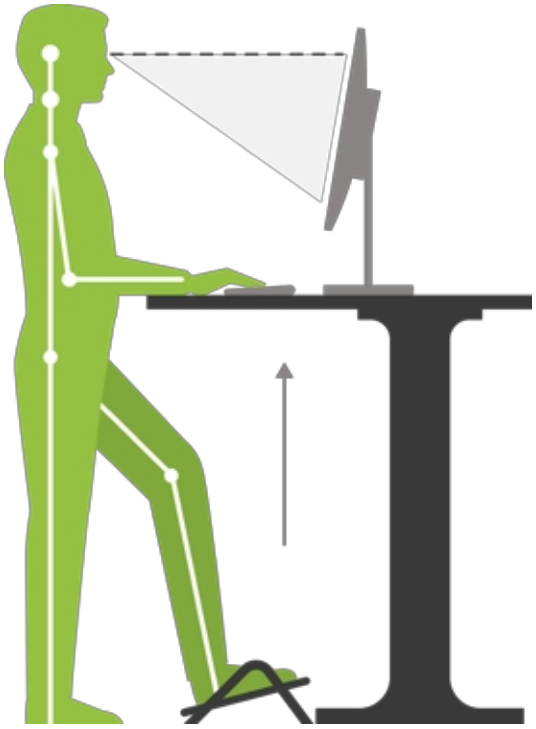
SIT-STAND WORKSTATIONS: NECESSITY OR ADVANTAGE?

Since 1950, the number of sedentary jobs has increased by 83% (Carr et al., 2016), and scientific evidence has shown that adults spend between a third and a half of their working day seated (Chau et al., 2010). This new way of working tends to increase sedentariness and reduce the rate of physical activity among workers.



Sedentary lifestyles can be associated with mundane behaviors such as taking the elevator instead of the stairs, driving to work instead of walking, spending the day in front of the computer, sitting down for a meeting and/or sending e-mails to communicate with colleagues.

A sedentary lifestyle is now an alarming public health problem. Strong evidence leads to an association between a sedentary lifestyle and premature death, in general, independently of physical activity (Commissaris et al., 2016). In addition, other certainties associate the high number of sedentary jobs to other health complications such as chronic diseases, obesity, diminished cognitive functions, mental distress and the development of musculoskeletal disorders (MSDs).

Many companies are now facing a problem related to the nature of their activities.

A great deal of research is being carried out to find solutions to reduce inactivity at work, and consequently to reduce prolonged sitting. For some time now, the sit-stand workstation has been under the radar.

One of the main aims using a sit-stand workstation is to introduce physical variations between sitting and standing, and thus improve musculoskeletal health.

Several questions arise in this regard:

- **Does it really work?**
- **What is the scientific validity of sit-stand stations?**
- **How much time should I spend standing versus sitting?**
- **Should we provide it to all employees?**

Despite recent studies on the subject, the results show no consensus in relation to sit-stand workstations. Whether in terms of their effectiveness, the time split between sitting and standing, health benefits or the type of worker targeted.

Here's what the latest studies show

- The sit-stand workstation enables a change in trunk position. However, as far as the shoulder and lower back muscles are concerned, the change is not significant in terms of static muscle load. Consequently, shoulder and lower back muscles cannot be lightened by equipment such as a sit-stand station. Being more active during breaks, such as walking instead of sitting, would be more effective for back and shoulder muscles. In addition, introducing leg movements through more active break activities can help reduce foot swelling (Bao and Lin, 2018).
- Workers would tend to benefit more from a natural change in their posture without a strict schedule compared to a pre-set allocation time on sit-stand stations.
- Using a sit-stand station with a schedule of 30 minutes sitting and 30 minutes standing or 45 minutes sitting and 15 minutes standing would have a positive impact on energy expenditure, certain blood parameters and the severity of depression compared to a worker who spends all his time sitting. In addition, workers alternating posture between 45 minutes sitting and 15 minutes standing would see positive effects on physiological, mental and productivity parameters.

- The maintain of the posture standing is more demanding.
  It is therefore more difficult to maintain a standing posture than a sitting posture, since more muscles are required. For that reason, standing is disadvantageous for high-cognitive activities and for activities where attention is divided.

In short, it's important to note that these studies in no way objectively demonstrated the effectiveness of a sit-stand workstation.

In conclusion

Given the discrepancy in the results concerning the sit-stand workstation, it is difficult for us to validate the beneficial effects on workers' health beyond any doubt.

At Ergokinox, we believe that sit-stand can be used to break the stagnation of sitting, but we make it a priority to take the time to stand up at least once an hour and move as many muscles as possible.

On the other hand, it's worth mentioning that the sit-stand station has another interesting use. It makes it easier to adjust the workstation, thus improving worker comfort.

A sit-stand station can be adjusted to suit the worker's height. Consequently, it provides adequate clearance between the legs and the work surface. It then keeps your feet on the ground at all times.

However, attention must be paid to the parameters of the adjustable table. It's recommended that desk's adjustment range be between 24" and 48.5" to accommodate a greater proportion of the working population.

This makes the sit-stand station an advantageous option for companies that are, or are thinking of, migrating to an office layout with shared workstations.

We recommend a height-adjustable desk rather than a platform installed directly on the desk. Unlike an adjustable desk, you can't rest your upper limbs on the platform, which can lead to muscle fatigue.

Height-adjustable desk

Platform

The height-adjustable desk should be prioritized for a certain category of workers, i.e. employees who are at their workstation for several hours at a time and don't have to go out into the field, and workers who are in meetings most of the day.

The use of a height-adjustable desk would be all the more beneficial for telecommuting employees, because unlike office routine, telecommuting by its nature and environment forces workers to remain more at their workstation.

We can therefore conclude that the sit-stand workstation is not a necessity, but can bring benefits in terms of certain health parameters and workstation adjustment.

References

Bao & Jia-Hua Lin (2018) An investigation into four different sit-stand workstation use schedules, Ergonomics, 61:2, 243-254, DOI: 10.1080/00140139.2017.1353139

Carr, L. J., Leonhard, C., Tucker, S., Fethke, N., Benzo, R., & Gerr, F. (2016). Total Worker Health Intervention Increases Activity of Sedentary Workers. American Journal of Preventive Medicine, 50(1), 9-17. doi:10.1016/j.amepre.2015.06.022

Chau, J. Y., Van Der Ploeg, H. P., van Uffelen, J. G. Z., Wong, J., Riphagen, I., Healy, G. N., . . .

Brown, W. J. (2010). Are workplace interventions to reduce sitting effective? A systematic review. Preventive Medicine, 51(5), 352-356. doi:10.1016/j.ypmed.2010.08.012

Hadi Daneshmandi, Alireza Choobineh, Haleh Ghaem & Najmeh Hejazi (2019): Proper sit-stand work schedule to reduce the negative outcomes of sedentary behavior: arandomized clinical trial, International Journal of Occupational Safety and Ergonomics, DOI: 10.1080/10803548.2019.1679972

Hedge, A. and Ray, E.J. (2004) Effects of an electronic height-adjustable worksurface on self-assessed musculoskeletal discomfort and productivity among computer workers, Proceedings of the Human Factors and Ergonomics Society 48th Annual Meeting, New Orleans, Sept. 20-24, HFES, Santa Monica, 1091-1095.

Kang, S. H., Lee, J., & Jin, S. (2021). Effect of standing desk use on cognitive performance and physical workload while engaged with high cognitive demand tasks. Applied Ergonomics, 92, 103306. doi:10.1016/j.apergo.2020.103306

Shuchi Agarwal, Craig Steinmaus & Carisa Harris-Adamson (2018) Sitstand workstations and impact on low back discomfort: a systematic review and meta-analysis, Ergonomics, 61:4, 538-552, DOI: 10.1080/00140139.2017.1402960